



SDI Review Form 1.6

Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	Ms_JAMCS_42590
Title of the Manuscript:	Complete Dynamics of a Fundamental Bound State Theory and Application to Gravitational Systems
Type of the Article	

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	The present manuscript combines the dynamics of a bound state theory - based on a QED like Lagrangian with fermions coupled to boson fields. This formalism also has been tested in gravitational systems. The paper is well formulated and can be accepted after these clarifications given below. The Author(s) have considered a six-dimensional non-renormalizable operator in the theory. Is this theory valid up to $\tilde{m}$? What is the value of $\tilde{m}$? Why are other dimensional operators (especially five dimensions) missing from the theory? Author(s) should talk about chirality in this section and/or may refer to the other section(s). What do you mean by 'fermionic wave functions $\psi(p) = 1/\tilde{m}^{3/2} \Psi(p_1) \Psi(p_2)$ of scalar and vector structure'? Is there any bar on $\Psi(p_1)$? Both electron and proton are fermions. Please change section heading 'Gravitation described by magnetic binding of fermion-hadron pairs'. Remove '2' from the expression (v/c). "keeping the parameters $\kappa = 1.35$ and $\alpha = 2.14$ as in previous studies' Reference is needed. The value of α is $\sim 1/127$ at 91 GeV. How you got this 2.14? 'The dimensional quantities are given in GeV or fm', Please specify the quantities. It will be good for the readers. 'x is defined as $x = \dots$' Check the expression. What do you mean by M_{tot}? Similarly, few other notations are not defined properly. What is Matter-antimatter symmetric system? Need references. 'The present fundamental theory couples to the (absolute) vacuum' what do you mean by absolute vacuum? If it was not absolute (but metastable or unstable) what will happen? 'the electron (left-handed) and positron (right-handed) and the accompanying protons or antiprotons have no chiral structure', is these lines are correct? Check the literature. The galactic system contains different amount of stars and noninteracting dark matter and dead planets. How will these affect your results? The last line of the summary should be removed. The Author(s) have missed many of the references.	Point 1 and 2: The introduction is modified significantly to explain in more detail the relation of the present description with other models. The virtues of the present model is emphasized: no external parameters and unified approach to all interactions (also gravitation). Chirality is discussed. The structure of the wave function (scalar or vector) is explained. Point 3: Section 3, heading changed: ... <u>lepton-hadron</u> pairs Point 4: Concerning κ and α refs. are given. The coupling constant α of the present theory is different from the "fine structure constant α" of electrodynamics, but there is a direct relation between both, see ref. [5]. Point 5: Dimensions and definitions of the quantities "M_{tot}" and "x" in table 1 are given. Point 6: "Matter-antimatter symmetric system" is explained (for gravitation: equal amount of (e^+p^-) and (e^-p^+) pairs). Point 7: Vacuum better explained, "(absolute)" deleted. Point 8: "Protons and antiprotons have no chiral structure", explained. Point 9: From the present theory there is no reason to assume the existence of dark matter. A careful analysis of rotation velocities of varies galaxies in ref. [6] shows that the experimental observations are well described in the present approach. "Dark matter halos", derived from the Keplerian $v_{rot}(r) \sim \sqrt{G_N M/r}$ formula don't have to be assumed. Other effects due to dead planets and masses heavier than hydrogen are small. Last points: Last sentence of summary removed, additional refs. included. The introduction includes now a discussion of other models and the relation to the present theory. Appropriate changes in the abstract and the conclusion are made, as proposed by the
Minor REVISION comments	The abstract should be in the same paragraph. Literature survey and a brief summary of the sections (one line max for each section/subsection) are missing in the introduction. Please logically write the Summary and Conclusion, remove the points 1,2,3.	
Optional/General comments	NA	